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CHANNAVAJALA, SRIRAMA T	
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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/755,020	Applicant(s) HITZ ET AL.	
	Examiner Srirama Channavajjala	Art Unit 2166	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-30, 33-49 and 52-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) -10, 13-30, 33-49 and 52-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/6/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-10,13-30,33-49,,52-57 are pending in this application.
2. Examiner acknowledges applicant's amendment to claims 1,13,20,34,39,48-49,52 filed on 12/6/2004.
3. Claims 11-12,31-32, 50-51, 58 have been cancelled [12/6/2004].

**Drawings**

4. The Drawings filed on 1/8/2004 are acceptable for examination purpose.
5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims, for example claim 1 is directed to “  
A method of operating a data storage system configured to perform data mirroring, the method comprising: receiving a set of data.....  
defining a compression group.....  
compressing the set of data so that the set of data.....  
for each of the subsets which does not contain compressed data.....  
at a consistency point, sending the set of data in its entirety.....consistency point”  
Therefore, each specific function must be shown or the feature(s) canceled from the claim(s), or at least a flow-diagram showing every feature of the invention specified in the claims, although applicant submitted drawing 1-5, these drawings fig 1-5 do not specify every feature as in claim 1.

No new matter should be entered.

***Information Disclosure Statement***

6. The information disclosure statement filed on 1/8/2004 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy is enclosed with this Office Action.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

***As set forth in MPEP 2106(II)A:***

*Identify and understand Any Practical Application Asserted for the Invention The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)). Accordingly, a complete disclosure should contain some indication of the practical application for the claimed invention, i.e., why the applicant believes the claimed invention is useful.*

*Apart from the utility requirement of 35 U.S.C. 101, usefulness under the patent eligibility standard requires significant functionality to be present to satisfy the useful result aspect of the practical application requirement. See Arrhythmia, 958 F.2d at 1057, 22 USPQ2d at 1036.*

*Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some “real world” value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 **does not mean that a useful result is achieved under the practical application requirement.** The claimed invention as a whole must produce a “useful, concrete and tangible” result to have a practical application.*

7. Claims 1-10,13-49,52-57 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The invention as claimed in claim1 is interpreted in light of the specification particularly page 7, 0019, page 12-13, 0033-0036, is directed to a method, system which is a combination of hardware and software or a method which is preformed using hardware and software or software per sa, both system and method performing a mathematical algorithm, formula, or calculation, and as such the claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a **“useful, concrete and tangible result.”** The Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim

must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

Claim 1 have the result of at a consistency point, sending the set of data in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the set of data, if the set of data.....consistency point is merely data mirroring or otherwise used in the real world. Thus the claimed result is not tangible and thus the claimed result is not a “useful, concrete and tangible result.” The court in State Street noted that the claimed invention in Alappat constituted a practical application of an abstract idea because it produced *a useful, concrete and tangible result* the display of a smoothed heart beat to a system user. The Federal Circuit further ruled that it is of little relevance whether a claim is directed to a machine or process for the purpose of a § 101 analysis. AT&T, 172 F.3d at 1358, 50 USPQ2d at 1451 (see the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex II).

The examiner reviewed the specification but was unable to find a practical real-world use of the result (at a consistency point, sending the set of data in its entirety to a remote data.....modified since a prior consistency point). If the applicant is able to find one and inserts it into the claims provide the location the element is found in the specification.

8. Regarding 13, "A method of operating a data storage system configured to perform data mirroring, the method comprising:

receiving a file containing data;

compressing at least part of the file to form.....at consistency point, determining whether any data represented by one of the compression groups has been modified since a prior consistency point, and if any data represented by said one of the compression groups has been modified since a prior consistency point, sending said one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy" is directed to "abstract idea" because all of the elements in the claim 13 would reasonably be interpreted by one of ordinary skill in light of the disclosure page 7, 0019, page 12-13, 0033-0036, page 15-17 as software, such that the method is software, per se, is "non-statutory subject matter" [see Interim Guidelines page 55-57] and **claim 13** do not have "practical application" because the "final result" by the claimed invention in the claim 12 elements particularly "at consistency point, determining whether any data represented by one of the compression groups has been modified since a prior consistency point, and if any data represented by said one of the compression groups has been modified since a prior consistency point, sending said one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy" is merely algorithm, is not producing "useful, tangible and concrete" and therefore, claim 13 is a non-statutory subject matter [see Interim Guidelines page 55-57]. The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02.

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Specifically State Street sets forth that the claimed invention must produce a ***“useful, concrete and tangible result.”*** The **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

Claim 13 have the result of producing results related to “at consistency point, determining whether any data represented by one of the compression groups has been modified since a prior consistency point, and if any data represented by said one of the compression groups has been modified since a prior consistency point, sending said one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy” however the claim[s] do not specify [a]: satisfying proper condition[s]; [b] that the result neither stored nor output is displayed to a user or otherwise used in the real world, but does not output useful, concrete and tangible result.

The claims 14-19 dependent from claim 13 is also rejected in the above analysis.



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9. Regarding claim 20,34, "A method of operating a data storage system configured to perform data mirroring, the method comprising: receiving a file at the data storage system,.....defining a compression group to represent the portion of the file.....determining whether the portion of the file is suitable for compression.....for each of the number of consecutive blocks which does not contain.....at a mirroring event: scanning the compression .....determining whether any block in the portion of the file has been modified since a prior mirroring event, and if the portion of the file has been compressed and at least one block in the portion of the file has been modified since the prior mirroring event, sending the portion of the file in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the file" is directed to "abstract idea" because all of the elements in the claim 20,34, would reasonably be interpreted by one of ordinary skill in light of the disclosure page 7, 0019, page 12-13, 0033-0036, page 15-17 as software [merely algorithm], such that the method is software, per se, is "non-statutory subject matter" [see Interim Guidelines page 55-57] and **claim 20,34** do not have "practical application" because the "final result" by the claimed invention in the claim 20,34 elements particularly "determining whether any block in the portion of the file has been modified since a prior mirroring event, and if the portion of the file has been compressed and at least one block in the portion of the file has been modified since the prior mirroring event, sending the portion of the file in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the file" is merely code or routines or algorithm, is not producing "useful, tangible and concrete" and therefore, claim 20 is a non-statutory subject matter [see Interim

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Guidelines page 55-57]. The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a ***“useful, concrete and tangible result.”*** The **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

Claim 20,34 have the result of producing results related to “determining whether any block in the portion of the file has been modified since a prior mirroring event, and if the portion of the file has been compressed and at least one block in the portion of the file has been modified since the prior mirroring event, sending the portion of the file in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the file” however the claim[s] do not specify [a]: satisfying proper condition[s]; [b] that the result neither stored nor output is displayed to a user or otherwise used in the real world, but does not output useful, concrete and tangible result.

The claims 21-33, 35-38 dependent from claim 20, 34 is also rejected in the above analysis.

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10. Regarding claim 39, "A storage server comprising: a processor.....for each of the subsets which does not contain compressed data.....the memory further containing code which.....at a mirroring event, sending the set of data in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the set of data, if at least one of the subsets of the set of data has been modified since a prior mirroring event" is directed to "abstract idea" because all of the elements in the claim 39, would reasonably be interpreted by one of ordinary skill in light of the disclosure page 7, 0019, page 12-13, 0033-0036, page 15-17 as software [merely algorithm], such that the method is software, per se, is "non-statutory subject matter" [see Interim Guidelines page 55-57] and **claim 39** do not have "practical application" because the "final result" by the claimed invention in the claim 39 elements particularly "sending the set of data in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the set of data, if at least one of the subsets of the set of data has been modified since a prior mirroring event" is merely code or routines or algorithm, is not producing "useful, tangible and concrete" and therefore, claim 39 is a non-statutory subject matter [see Interim Guidelines page 55-57]. The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a **"useful, concrete and tangible result."**

**The Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does

require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

Claim 39 has the result of producing results related to “sending the set of data in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the set of data, if at least one of the subsets of the set of data has been modified since a prior mirroring event” however the claim[s] do not specify [a]: satisfying proper condition[s]; [b] that the result neither stored nor output is displayed to a user or otherwise used in the real world, but does not output useful, concrete and tangible result.

The claims 40-49 dependent from claim 39 is also rejected in the above analysis.

11. Regarding claim 52, “An apparatus comprising: means for receiving a file containing data; means for compressing .....means for sending one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy, if the compression group represents a compressed portion of the file and any data represented by the compression group has been modified since a previously-determined prior point in time” is directed to “abstract idea” because all of the elements in the claim 52, would reasonably be interpreted by one of ordinary skill in light of the disclosure page 7, 0019, page 12-13, 0033-0036, page 15-17 as software [merely algorithm], such that the method is software, per se, is “non-statutory subject matter”

[see Interim Guidelines page 55-57] and **claim 39** do not have “practical application” because the “final result” by the claimed invention in the claim 52 elements particularly “means for sending one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy, if the compression group represents a compressed portion of the file and any data represented by the compression group has been modified since a previously-determined prior point in time” is merely code or routines or algorithm, is not producing “useful, tangible and concrete” and therefore, claim 39 is a non-statutory subject matter [see Interim Guidelines page 55-57]. The claimed invention is subject to the test of State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Specifically State Street sets forth that the claimed invention must produce a **“useful, concrete and tangible result.”** The **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility** states in section IV C. 2 b. (2) (on page 21 in the PDF format):

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a § 101 judicial exception, in that the process claim must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

Claim 52 has the result of producing results related to “means for sending one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy, if the compression group represents a compressed portion of

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the file and any data represented by the compression group has been modified since a previously-determined prior point in time” however the claim[s] do not specify [a]: satisfying proper condition[s]; [b] that the result neither stored nor output is displayed to a user or otherwise used in the real world, but does not output useful, concrete and tangible result.

The claims 53-57 dependent from claim 52 is also rejected in the above analysis.

Also see 35 USC 101 Interim Guidelines

“<http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html>”

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. ***Claims 1-12,39-49, are rejected under 35 U.S.C. 103(a) as being unpatentable over Selkirk et al. [hereafter Selkirk], US Patent No. 6779095 in view of Brown, US Patent No. 5850565***

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14. As to claim 1, 39, Selkirk teaches a system which including 'data storage system configured to perform data mirroring' [col 1, line 55-57, col 19, line 11-22], data mirroring corresponds to snapshot copy process as detailed in col 1, line 55-57, col 19, line 11-22;; 'receiving a set of data, the set of data having a first number of subsets' [col 11, line 23-25, col 14, line 26-28, fig 8], Selkirk teaches logical unit number table having multiple entries for example table 802 as detailed in col 11, line 23-25;

'plurality of entries, each entry containing a pointer to a corresponding one of the subsets' [col 14, line 39-46, 48-50, fig 12], Selkirk specifically suggests control block entry of data containing number of blocks variable length entries to be written to a disk as detailed in col 14, line 39-42, further Seikirk also suggests data structure particularly logical block address containing number of used blocks, unused blocks and pointers as detailed in fig 12;

'storing a predetermined value in the corresponding entry of the compression group, the predetermined value [col 15, line 23-32, fig 14];

'at a consistency point, sending the set of data in its entirety to a remote data storage system at a mirror site, for use in a mirror copy of the set of data [col 7, line 23-32], any one or more of the subsets of the set of data has been modified since a prior consistency point'[col 12, line 23-29]. It is however, noted that Seikirk does not specifically teach 'defining a compression group corresponding to the set of data, compressing the set of data so that the set of data occupies a smaller number of the subsets than the first number, storing a predetermined value in the corresponding entry of the compression group, the predetermined value being indicative that corresponding

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data is compressed', although Seikirk suggested number of data blocks required compression as it allows variable length entries to be written to a disk [Seikirk: col 14, line 40-43]. On the other hand, Wightman disclosed 'defining a compression group corresponding to the set of data, compressing the set of data so that the set of data occupies a smaller number of the subsets than the first number[col 5, line 16-31], storing a predetermined value in the corresponding entry of the compression group, the predetermined value being indicative that corresponding data is compressed' [col 6, line 5-14, 62-66].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Wightman into instant copy of data using pointers to new and original data in a data location of Selkirk et al. because both Selkirk and Wightman are directed to data storage [see Selkirk: fig 1; Wightman: fig 1], both Seikirk and Wightman suggests hash algorithm to calculate hash values [Seikirk: col 12, line 32-41; Wightman: col 5, line 36-38].

One of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Wightman into instant copy of data using pointers to new and original data in a data location of Selkirk et al. because that would have allowed users of Seikirk to use "data compression" particularly, data compression that scans one or more data files to locate variable length strings of character or data that can be more efficiently compressed bringing the advantages of saving storage space and



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reduce the amount of time taken to transfer the data as suggested by Wightman [col 3, line 32-40, col 4, 14-21].

15. As to claim 2, 41, Wightman disclosed 'predetermined value further is indicative that the corresponding compressed data is represented in a different entry of the compression group' [col 5, line 54-59].

16. As to claim 3, 42, Wightman disclosed 'predetermined value further is indicative of the compression algorithm used to compress the data' [col 5, line 16-22].

17. As to claim 4, 43, Seikirk disclosed 'wherein the set of daa is a portion of a file, and each of the subsets of the set of data is a separate block within said portion of the file' [col 18, line 25-33].

18. As to claim 5, 44, Wightman disclosed 'wherein the method further comprises writing the portion of the file to a non-volatile storage device after said compressing' [col 6, line 52-61].

19. As to claim 6, 45, Wightman disclosed 'writing the portion of the file to the non-volatile storage device is performed after said compressing but before any other portion of the file is received by the storage system' [col 6, line 33-39, line 52-61].

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20. As to claim 7-8, 46-47, Wightman disclosed 'compression group is a portion of an indirect node of the file' [col 4, line 35-42].

21. As to claim 9, 48, Wightman disclosed 'saving an uncompressed version of the portion of the set of data in a memory in the data storage system after said compressing' [col 7, line 11-15, line 44-47], uncompressed corresponds to Wightman's decompressor; 'in response to a subsequent request on the set of data, using the uncompressed version of the data from the memory to fulfil the request' [col 7, line 47-55].

22. As to claim 10, 49, Wightman disclosed 'receiving a read request' [col 7, line 3-8]; 'in response to the read request, determining that the read request relates to at least one subset of the set of data' [col 7, line 11-15]; 'scanning the compression group to determine whether any entry in the compression group contains the predetermined value' [col 5, line 37-42]; 'upon detecting the predetermined value in any of the entries in the compression group, immediately beginning decompression of the set of data' [col 7, line 16-22].

23. As to claim 40, Selkirk disclosed 'wherein said process of managing data is performed by a file system layer of the data storage server' [fig 1, col 4, line 31-32].

***Claim Rejections - 35 USC § 102***

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

25. ***Claims 13- 19, 52-57, are rejected under 35 U.S.C. 102(a) as being anticipated by Rust et al. [hereafter Rust], US Patent No. 6532121 published on March 11, 2003.***

26. As to claim 13, 52, Rust teaches a system which including 'data storage system configured to perform data mirroring' [col 7, line 56-62 fig 4], data mirroring corresponds to data stored in mirrored memories fig 4, 'receiving a file containing data' [col 3, line 2-5]; 'compressing at least part of the file to form a plurality of compression groups' [col 4, line 32-34, fig 1], each of the compression groups representing less than the entire file [col 4, line 35-37], 'each of the compression groups corresponding to an independently compressible group of data' [col 8, line 13-20], at a consistency point, determining whether any data represented by one of the compression groups has been modified since a prior consistency point' [col 8, line 20-23]; 'if any data represented by said one of the compression groups has been modified since a prior consistency point, sending said one of the compression groups in its entirety to a remote data storage system at a mirror site, for use in a mirror copy' [col 8, line 58-67, col 9, line 1-5].

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27. As to claim 14, Rust disclosed 'wherein each of the compression groups represents a plurality of blocks of the file' [col 10, line 65-67, line 1-2].

28. As to claim 15-16, 53-54, Rust disclosed 'compressing at least part of the file comprises compressing the data represented by each of the compression groups independently' [col 9, line 6-8].

29. As to claim 17, 55, Rust disclosed 'each of the compression groups contains a plurality of pointers' [col 9, line 26-30].

30. As to claim 18, 56, Rust disclosed 'at least one of the pointers in each of the compression groups points to compressed data, and wherein at least one other pointer in each of the compression groups is a predetermined value indicative that corresponding data has been compressed' [col 9, line 33-39].

31. As to claim 19, 57, Rust disclosed 'predetermined value further is indicative of the compression algorithm used to compress the data' [col 8, line 27-29].

32. *Claims 20-30,33-38, are rejected under 35 U.S.C. 103(a) as being unpatentable over Goris et al. [hereafter Goris], US Patent No. 6157743, in view of Selkirk et al. [hereafter Selkirk], US Patent No. 6779095*

33. As to claim 20, 34, Goris teaches a system which including 'receiving a file at the data storage system [col 6, line 18-29], a portion of the file including a number of consecutive blocks of uncompressed data' [col 3, line 30-33, col 6, line 55-58, fig 2], uncompressed data blocks corresponds to Goris's fig 2, 202;

'defining a compression group to represent the portion of the file, including defining the compression group to have a plurality of entries and filling each of the entries with a block number that points to a corresponding one of the blocks' [col 6, line 50-55, col 7, line 2-9], compression group corresponds to Goris's fig 2, element 200, further Goris's fig 2 also suggests number of compressed blocks ;

'determining whether the portion of the file is suitable for compression, if the portion of the file is determined to be suitable for compression, then compressing the portion of the file so that the portion occupies a smaller number of consecutive blocks' [col 7, line 11-21, line 27-36, fig 4], Goris specifically suggests data structure consists of segments for example element 400 segments 0-n that corresponds to smaller number of consecutive blocks suitable for compression;

'for each of the number of consecutive blocks which does not contain compressed data after said compressing[fig 4, element 400], storing a predetermined block number in the corresponding entry of the compression group, the predetermined

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block number being indicative that corresponding data is compressed and represented elsewhere in the compression group'[col 7, line 57-67, col 8, line 1-2, fig 4-5];

'compression group to determine whether the portion of the file has been compressed' [col 8, line 13-20];

'if the portion of the file has been compressed and at least one block in the portion of the file has been modified, sending the portion of the file in its entirety to a remote data storage system'[col 8, line 47-56, col 10, line 1-8]. It is however, noted that Goris does not specifically teach 'data mirroring, remote data storage system at a mirror site for use in a mirror copy of the file' . On the other hand, Selkirk disclosed 'data mirroring, remote data storage system at a mirror site for use in a mirror copy of the file' col 1, line 55-57, col 19, line 11-22], data mirroring corresponds to snapshot copy process as detailed in col 1, line 55-57, col 19, line 11-22, remote data storage corresponds to networked storage system as detailed in fig 3.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Selkirk et al. into retrieving compressed texture data from a memory system of Goris et al. because both Goris, Selkirk are directed to data storage system, more specifically both are directed to Data storage data structure [Goris: fig 2-3; col 3, line 19-23; Selkirk: Abstract, fig 7-8], particularly, Selkirk is directed to stored data management subsystem having one or more hosts, storage elements organized using plurality of layers of mapping tables [see col 2, line 45-50], while Goris is directed to specifically retrieving compressed data from

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the storage system, particularly, storage memory in the form of blocks having varying lengths, addresses and location and like [see Abstract].

one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Selkirk et al. into retrieving compressed texture data from a memory system of Goris et al. because that would have allowed users of Goris to use instant copying data, particularly, mirroring data files or records because instant data or copy of data is extremely useful in "point of time" [Selkirk: col 2, line 32-37], further allows data storage capabilities using multiple sets of stripe groups to effect the availability, thus improve the reliability when specifications change and become higher than originally required as suggested by Selkirk: col 7, line 36-47.

34. As to claim 21, Goris disclosed 'defining a compression group so as to define a plurality of compression groups to represent the file' [col 6, line 50-55, col 7, line 2-9], compression group corresponds to Goris's fig 2, element 200;

35. As to claim 22-23, 36-37, Goris disclosed 'each compression group represents a portion of an indirect node of the file' [col 8, line 40-43].

36. As to claim 24, 35, Goris disclosed 'predetermined block number further is indicative of the compression algorithm used to compress the data' [col 7, line 65-67, col 8, line 1-2].

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37. As to claim 25, Goris disclosed 'wherein the file comprises a plurality of portions, each including a plurality of blocks of data, and wherein the method further comprises repeating said defining, determining, compressing, and storing for each of the plurality of portions' [col 7, line 56-65]

38. As to claim 26, 38, Goris disclosed 'determining that the portion of the file is compressed by scanning the compression group for the predetermined block number' [col 9, line 15-25].

39. As to claim 27-28, Goris disclosed 'wherein said method is performed in response to a request to write the file' [col 10, line 45-48]; 'wherein the method further comprises writing the portion of the file to a non-volatile storage device after said compressing' [col 10, line 49-62].

40. As to claim 29, Goris disclosed 'saving an uncompressed version of the portion of the file in a memory in the data storage system after said compressing' [col 9, line 56-64];

'in response to subsequent request on the portion of the file, using the uncompressed version from the memory to fulfill the request, without decompressing the compressed portion of the file' [col 10, line 63-65, col 11, line 1-6].



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41. As to claim 30, Goris disclosed 'receiving a read request at the data storage system' [col 9, line 38-44];

'in response to the read request, determining that the read request relates to at least one block of the portion of the file' [col 9, line 41-51];

'scanning the compression group to determine whether any entry in the compression group contains the predetermined block number' [col 7, line 30-36, col 9, line 17-25];

'upon detecting the predetermined block number in any of the entries in compression group, immediately beginning decompression of the portion of the file' [col 7, line 65-67, col 8, line 1-7].

42. As to claim 33, Goris disclosed 'wherein consecutive entries in the compression group correspond to consecutive blocks in the file' [col 8, line 13-20].

### ***Conclusion***

#### ***The prior art made of record***

a.	US Patent.No.	6157743
b.	US Patent No..	6779095
c.	US Patent No.	6532121
d.	US Patent No.	5850565

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is 571-272-4108. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

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July 12, 2006.

  
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